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To Bruce Morrison/SUPR/R7/USEPA/US@EPA, Gwen Yoshimura/ARTD/R7/USEPA/US@EPA
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Subject Herculaneum - Air Modeling

Bruce & Gwen
It is not possible to evaluate the *Interim Report for Community Risk Assessment, Herculaneum, Missouri*, without the modeling input and output files that were used/produced. Some techniques and data are discussed in the report but the data that were actually used in the modeling were not included. I assume that the Gradient Corporation (Gradient) modeled only the slag pile. All input/output data, including the meteorological data, should be provided in electronic format and included if the report is to be evaluated. We need the electronic files that Gradient used in its modeling.

Although the reported predicted air concentrations differ from what were predicted in the State Implementation Plan (SIP) modeling, the results of the modeling are similar in that the concentrations decrease rapidly as the distance from the lead sources increase. The differences in the model results are due to different meteorology, assumptions in the source characteristics from the slag pile, and the number of emission points in the analyses. It was, and still is, difficult to calculate the emissions from the facility and the adjacent roads/property. This particularly true of the low-level fugitive sources. How much information is available for the road traffic near the Doe Run facility? Also, I believe that the meteorological data at the Herculaneum site should have been used instead of data from Lambert Field because of influence of the local topography.

The slag pile (page A-6 ) is referred to as a volume source and then as a poly shaped area source . It is not clear what type of source represented the slag pile, its source characteristics, if the size of the slag pile used in the modeling was 23 or 30 acres, and if both activity and wind erosion at the slag pile were considered. The input data for the slag pile for the SIP modeling were more detailed in the lead particulate data (size,mass fraction, density) but the shape of the area was represented as a 23 acre rectangle instead of the actual shape that was probably used in Gradient's modeling.

I assume that the quarterly lead air concentrations used in Gradient's study were the higher of the measured 2003 lead concentrations or the predicted concentrations that resulted from the modeling used to develop the latest SIP because they wanted conservative results.

My review was limited to the air dispersion modeling.